

ABSTRACT

~~Disclosed is a~~ A method for simultaneous generation of motion paths depending on changes of internal and external sizes of an object by a direction map for a 2-dimensional geometric figure, ~~the method including: a first step of~~ includes respectively expressing specific obstacle A and object B inputted through an input unit, by direction maps; ~~a second step of~~ merging the direction maps respectively expressing the obstacle and the object; ~~a third step of~~ determining Minkowski operation after sizes of the obstacle and the object are determined; ~~a fourth step of~~ performing a necessary group unit based size control operation for a direction map obtained by merging each of the direction maps of the obstacle and the object in the second step; ~~a fifth step of~~ performing collinear elimination for the result obtained in the fourth step, performing a direction map inverse operation, and performing a trimming operation to generate the motion path; and ~~a sixth step of~~ calculating a c-space obstacle for obstacle and object having different external and internal sizes.